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ABSTRACT

A study examined the ability of master teachers to maintain the learning environment and those competencies by which they were awarded master teacher rating. The five subjects studied were physical education teachers who obtained their Master Teacher degree at West Virginia University during the 1982-83 school year and who had been evaluated for each of the next five years they remained employed as full-time teachers in the public schools of West Virginia. Subjects were evaluated with a student-teacher process behavior observation system. Results revealed a decline in both teacher competencies and in the learning environment, as inferred by student process behavior overtime. Examination of individual data showed that, after only two years, all but one subject failed to maintain master teacher competencies and appropriate student behavior levels. (Author/CB)

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EVALUATING MASTER TEACHER PERFORMANCE: A FIVE-YEAR LONGTUDINAL STUDY

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EVALUATING MASTER TEACHER PERFORMANCE: A FIVE YEAR LONGTUDINAL STUDY. Ray T. Cool, Andrew H. Hawkins, Robert L. Wiegand, West Virginia University.

Teacher education should adopt as a primary goal the development of competencies needed to create and maintain the learning environment (Medley, 1979). The maintenance of these competencies and the maintenance of the learning environment are areas of significance in the pedagogical process. The purpose of this study was to examine the ability of master teachers to maintain the learning environment and those competencies by which they were awarded master teaching rating (Bahneman, Hawkins and Wiegand, 1983). The subjects (N=5) employed in this study were those physical educators who obtained the M.S. - Master Teacher degree at West Virginia University during the 1982-83 school year. All subjects were then evaluated each of the next five years (1983-87) while they reamined employed as full-time physical education teachers in the public schools of West Virginia. Subjects were evaluated utilizing a student-teacher process behavior observation system developed by Hawkins, Wiegand and Bahneman (1983). The cummulative group data for this study indicates a decline in both teacher competencies and in the learning environment as inferred by student process behavior overtime. An examination of individual data shows, after only two years, that all but one subject failed to maintain master teacher competencies and appropriate student behavior levels. Maintaining competencies are more difficult than achieving them (Siedentop, 1983). This study showed a decrease in competency overtime. The maintenance of teacher competencies and the learning environment is an area of the pedagogical process warranting further investigation.

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EVALUATING MASTER TEACHER PERFORMANCE:
A FIVE-YEAR LONGTUDINAL STUDY

History tells us that it will be very difficult for the New York Giants to repeat as Superbowl champions. Not since 1972 when the Pittsburg Steelers retained their championship has a team repeated. Thus for the past fifteen years the Superbowl champion could not maintain the skill level required to duplicate their accomplishments. The goal of professional sports teams should be to achieve high levels of performance (hopefully championships) and to further maintain those skills season to season. Teacher education ostensibly has a similar goal. Specifically, teacher education adopts as a primary goal the development of competencies needed to both create and maintain the learning environment (Medley, 1979). In teacher education, however, as in the NFL, maintaining competencies is viewed as more difficult than achieving them (Siedentop, (1983).

The means by which teacher education programs have evaluated the ability of their graduates to maintain competencies was largely through questionnaires mailed by placement services until the late 1960's. In 1970 the National Council of Accreditation of Teacher Education (NCATE) standards mandated follow-up research efforts. This NCATE guideline spurred several studies. One of the most influential was Sandefur's (1970) who proposed a follow-up model which has been applied in several other studies. Sandefur and Adams (1976), Adams (1978), Ayers (1978), and Earp and Tanner (1975) conducted follow-up studies based on the Sandefur model which listed the following components:

1. Career line data.
2. Direct classroom observation.
3. Pupil, peer, administrator evaluation.
4. Standardized measures.

While physical educators were included as subjects in these studies, research which specifically looked at physical educators is limited. Harvey (1973) conducted a survey of the male graduates (1946-72) of George Washington University which examined career status. Schalock, Yee, and Steger (1977) reported a high degree of variability between teacher competence and administrator rating scale evaluations. One of the most comprehensive follow-up studies to date was conducted by Freedman (1978). While utilizing the Sandefur (1970) research design he examined the behaviors of fourteen one and two year graduates of the Ohio State University. The study population was compared to graduates of other institutions and was found to teach similarly to physical educators trained elsewhere.

Follow-up studies, however, are few and far between. In an era of obvious belt-tightening in most teacher education institutions follow-up efforts must be maximally cost-effective while still providing the necessary feedback to monitor graduates and to utilize the feedback to improve the quality of preservice preparation (Freedman, 1985). This process is not taking place. NCATE reports that 58% of the teacher education programs reviewed during 1979 were in violation of the standard calling for follow-up studies.

PURPOSE OF THE STUDY

The purpose of this study was to conduct a longitudinal follow-up study of the physical education graduates who obtained the Master of Science - Master

Teacher degree at West Virginia University during the 1982-83 school year. The study purports to specifically examine the competency of master teachers in creating a learning environment as measured by student process variables, and in maintaining those behavioral competencies by which they were awarded their degree (Hawkins, Wiegand and Bahneman, 1982). Subjects were awarded master teacher rating by displaying competencies evaluated utilizing a student-teacher process behavior observation system developed by Hawkins, Wiegand, and Bahneman (1983). Program evaluation by observing actual behaviors of trainees or graduates is a powerful test of program effectiveness (Locke and Dodds, 1985). Due to the logistical problems, such observational studies are limited (Freedman, 1978). Conducting longitudinal studies of this nature is even more logistically difficult, but can be viewed as an even more stringent test of a program's effectiveness.

PROCEDURES OF THE STUDY

The subjects (N=5) employed in this study were the physical educators who obtained the M.S. - Master Teacher degree at West Virginia University during the 1982-83 school year. In addition to the graduate level coursework, a major component of the master teacher degree was the final performance practicum. During the practicum subjects had to create a specified learning environment as measured by student behavior, as well as achieve specific teacher behavior competencies (Hawkins, Wiegand and Bahneman 1982). Successful accomplishment of practicum performance criteria was evaluated utilizing the previously mentioned observation system. This includes eleven teacher behavior categories and eight student behavior categories. Data were collected using an electronic microprocessor which yielded duration (temporal percentage) and frequency (rate) data on

all behaviors. Data collectors alternated observations between subjects and a randomly selected student on one-minute intervals. A different randomly selected student was observed each time data collectors watched a student. Total observation time was twenty minutes--ten minutes of teacher data and ten one-minute student observations. All data collection was conducted by a trained data collector who attained a minumum of 85% accuracy by comparison to a coded criterion videotape. Reliability was calculated according to the following formula:

$$R = \frac{\text{Agreements}}{\text{Agreements + Disagreement}} \times 100$$

The practicum performance criteria, which all subjects met or exceeded, served as the baseline data (Year 1) for this study.

Subjects were then evaluated annually (1984-87) utilizing the same data collection process as during the practicum. Subjects were evaluated on their ability to create the learning environment as measured by student behaviors and on their ability to maintain the teacher behavioral competencies achieved during the practicum.

The practicum for all subjects in this study occurred during the Spring, 1983 school year at the West Virginia public school of their employment. The practicum was specific to the candidates level of specilization (early childhood, middle childhood or adolescence). Annual study observations were conducted during the month of March to approximate the time period during which the practicum was conducted. Within the month of March actual observation times and dates were randomly selected. Subjects were unaware of the actual date and

time of observation, being congnizant only that observation would occur during month of March. Of the five subjects, three remained at the practicum site of employment and at the same level of specialization this study.

ANALYSIS AND RESULTS

The data collected in this study were analyzed to examine:

1. Subjects' abilities to create a learning environment.
2. Subjects' abilities to maintain behavioral competencies by which they were awarded master teaching rating.

Both individual and cumulative group data were analyzed to determine if these objectives were accomplished.

LEARNING ENVIRONMENT

The subjects' abilities to create a learning environment was analyzed in regard to the practicum criteria for student performance. The practicum criteria states that subjects will instruct the class in a manner which will generate the following level of student behavior when the class context is designed for motor activity:

1. Percentage of time engaged in motor appropriate activity must average at least 40% for the practicum period.
2. Ratio of motor appropriate to motor inappropriate of at least 4:1.
3. Percentage of time spent waiting - less than 15%.
4. Percentage of time off task - less than 5%.

Figure 1 depicts the cumulative group data of the subjects' abilities to create a learning environment meeting these criteria.

Insert Figure 1 about here

In no annual observation period did the grouped data entirely meet the stated criteria. Interestingly, the data more closely approximated the criteria in years 4 and 5 than in years 2 and 3. The loss of subjects (one accepting an administrative position and a second changing institution of employment) and an excessively high motor appropriate level (76%) displayed by one subject can be viewed as factors contributing to what appears to us to be an artifact.

When individual data were analyzed two subjects were able to create a learning environment that met stated criteria across the duration of the study. Sadly, as often happens in physical education, the individual who displayed the highest levels was the subject who accepted an administrative position.

Table 1

Creating a Learning Environment - Individual Data

Category	Practicum [a]	Sub. 1[b]	Sub. 2	Sub. 3	Sub. 4	Sub. 5
Motor App. 1	40%	51%	41%	31%	30%	26%
MA:MI 2	4:1	E[d]	E	E	E	E
Waiting 3	15%	10%	15%	7%	22%	27%
Off Task 4	5%	1%	1%	2%	2%	2%

a. All subjects meet or exceed this level during practicum
b. Subject 1 - was employed for three years.
c. Subject 5 - was employed for four years.
d. E represents exceeding criteria by significant margin.
e. Underlined data does not meet criteria.

COMPETENCY MAINTENANCE

The subjects' ability to maintain those teacher behavior competencies by which they were awarded master teacher ratings was based on practicum criteria for teacher performance. These practicum criteria required the subjects to demonstrate the following levels of teacher behaviors:

1. Rate of positive feedback of at least 3.0 per minute.
2. Rate of correction/punishment of no more than .5 per minute.
3. Ratio of reinforcement to correction of at least 4:1.
4. Percentage of time spent in managerial behaviors during class of less than 10%.
5. Percentage of time spent in non-task verbal interaction between 1-5%.
6. Frequency of instruction should be less than reinforcement.
7. Rate of key instructional sequences of at least 1 per minute.

As all subjects in the study exceeded the stated criteria for competencies 6 and 7, the data analysis for this section will concentrate on competencies 1-5. Figure 2 depicts the subjects' maintenance of those competencies.

Insert Figure 2 about here

Again, as in analyzing the learning environment, in no annual observation period does the group data entirely meet the stated criteria. The two major areas of deficiency involved providing positive feedback at the specified rate of 3 per minute and limiting managerial behavior to less than 10% of class time. When individual data were analyzed (Table 2), only Subject 1 approximated the required behaviors representative of those in order to achieve master teacher rating. In 6 of 7 categories criteria were met. Subject 1 also displayed the best learning environment data, and when both areas were combined, was the only subject who could be said to have maintained master teacher competencies. All

other subjects were deficient in enough competencies to question their designation as master teachers.

Table 2

Maintaining Competencies - Individual Data

Category	Practicum [a]	Sub. 1[b]	Sub. 2	Sub. 3	Sub. 4	Sub. 5
Pos.Rein. 1	3 per min.	3.0	2.0	3.4	1.5	1.4
Cor/Pun 2	.5 per min.	.2	.2	.3	1.1	.7
Pos:Cor 3	4:1	15:1	10:1	11:1	1.3:1	2:1
Manag. 4	10%	16%	20%	15%	14%	19%
Non-Task 5	1-5%	4%	.7%	.5%	2%	.3%

a. All subjects meet or exceed this level during practicum
b. Subject 1 was employed for three years.
c. Subject 5 was employed for four years.
d. Underlined data does not meet criteria.

CONCLUSIONS

The purpose of this study was to longitudinally examine the ability of master teachers to create a specified learning environment and to maintain those behavioral competencies by which subjects were awarded master teaching rating. Research cited indicated that achievement of a competency was easier than its maintenance. In analyzing group data, this conclusion was supported. In no observation period were all subjects able to meet the criteria stated for the creation of a learning environment or for the maintenance of behavioral competencies. Grouped data did reveal that subjects seemed more able to meet the criteria of creating the learning environment according to student process measures than of maintaining their own behavioral competencies. Individual data

revealed that 40% (N=2) of the subjects were able to create a learning enviornment meeting stated criteria. Only 20% (N=1) of subjects was able to maintain behavioral competencies. This same subject was the one whose master teacher rating seemed legitimate when both learning environment and maintenance of competencies were combined.

On the optimistic side, even though the subjects in this study were unable to maintain the master teacher criteria, the levels of performance were nevertheless higher than comparable data collected in a prior study which examined the status of physical education in public schools of West Virginia (Cool, Wiegand and Hawkins, 1984). Thus, while master teachers displayed a decline in performance over time, the physical education service their students received still seemed superior to typical physical education service received by students in West Virginia.

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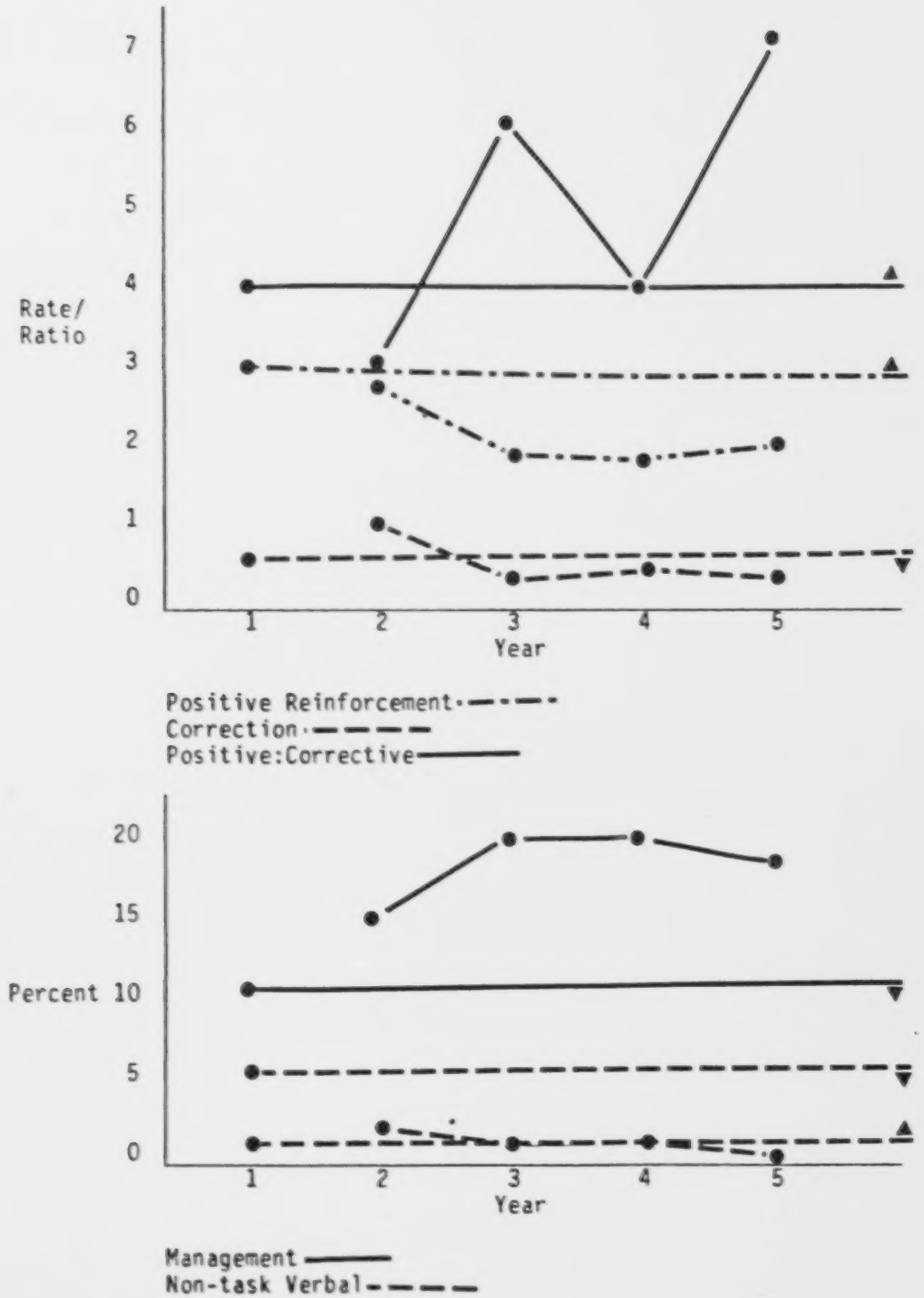

Figure 2. Longitudinal maintenance of teacher behavioral competencies.

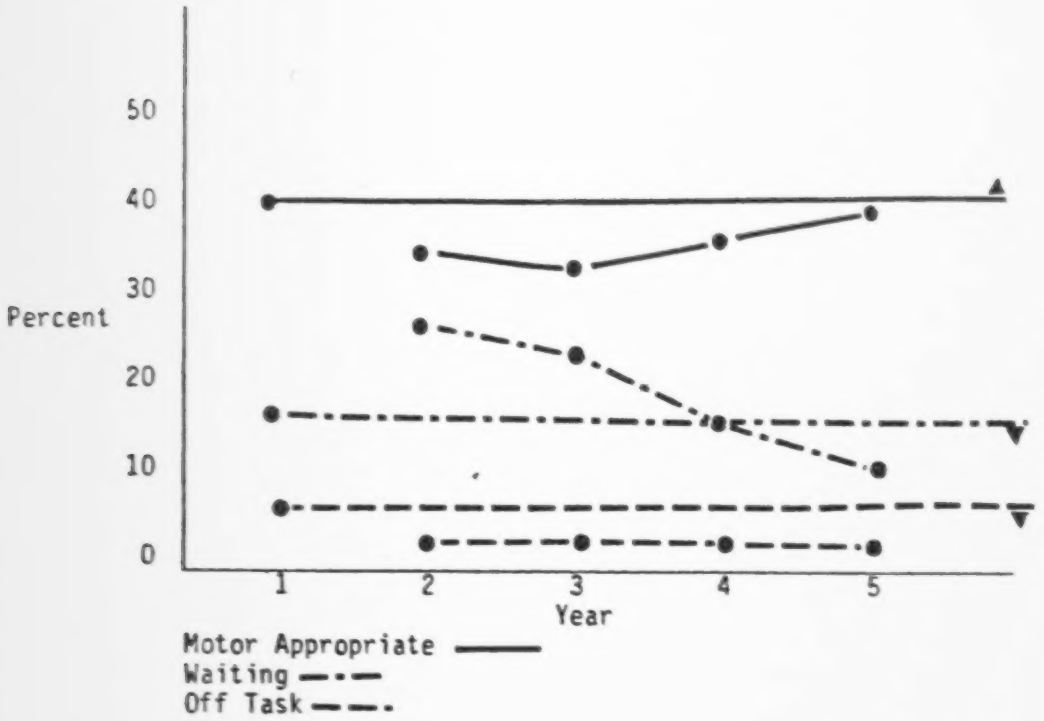

Figure 1. Longitudinal maintenance of learning environment competencies.

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